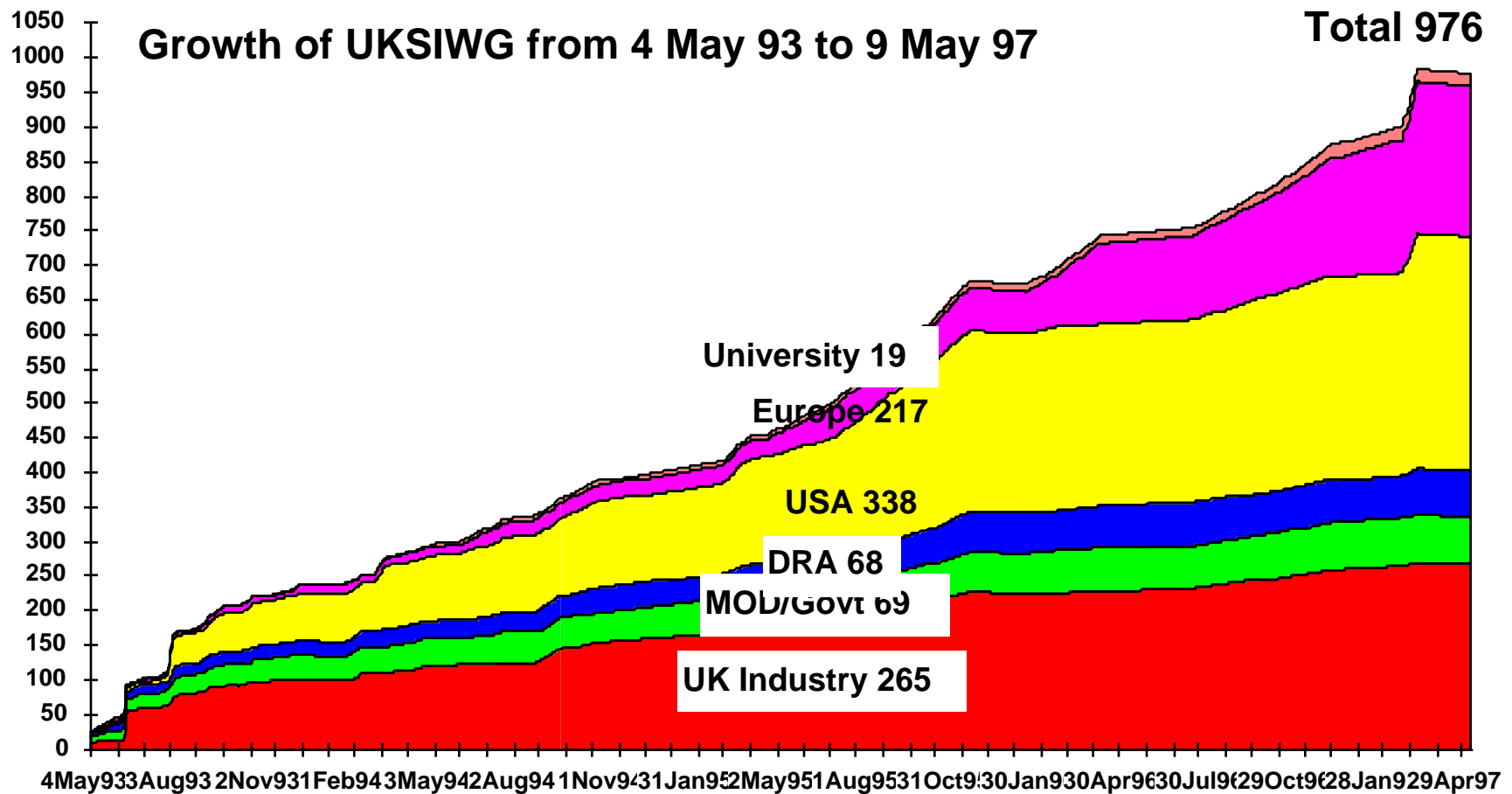# International Simulation Advisory Group
ISAG

DMSO

Industry Steering Group

Briefing to Government & Industry

Washington

23 May 97

Growth of UK SIWG

Growth of UKSIWG from 4 May 93 to 9 May 97

Total 976

University 19

Europe 217

USA 338

DRA 68

MOD/Govt 69

UK Industry 265

X-axis labels: 4May93 3Aug93 2Nov93 1Feb94 3May94 2Aug94 1Nov94 31Jan95 2May95 1Aug95 31Oct95 30Jan96 30Apr96 30Jul96 29Oct96 28Jan97 29Apr97

Y-axis: 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1050

Defence Manufacturers Association   UK Simulation Advisory Group   Simulation Interoperability Working Group   ISAG

Project FlasHLAmp - Programme

- Year 1 - Assess utility of the RTI software

- Year 2 - Promote development of support tools for HLA

- Year 3 - Produce draft guidelines for specifying interoperability requirements

Contracting Industry

- 16th September - RFQ Sent to industry 13 companies targeted

- 7th October - 10 industry responses to RFQ

- All companies contracted to undertake HLA Experiment

HLA Experiment

- Companies are producing simulations to interact with the RTI
- Most people have visited DRA Malvern for initial period
- Final Reports due end of March
- Project meetings to be held 2-3 weeks prior to issue of Final Report

RTI Development

- DERA and Data Sciences

- Incremental development of RTI

- Will be on general release to industry

Federation Creation

- Two Federations
  - » Warfighting (DIS Like)
  - » Analysis (ALSP Like)
- Federation development underway
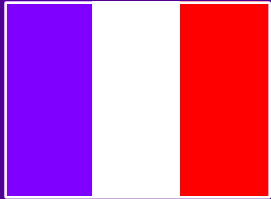- Demonstrate to MOD/Industry Captains September 97

Industry Partners

- **Warfighting Federation**
  - » Thomson Training Systems
  - » GEC Marconi S3I
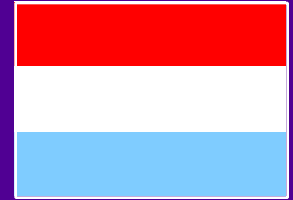 - » Matra BAe Dynamics
  - » Primary Image
  - » Headway Consultancy

- **Analysis Federation**
  - » Logica
  - » EDS
  - » EASAMS
  - » Corda
  - » Data Sciences Ltd
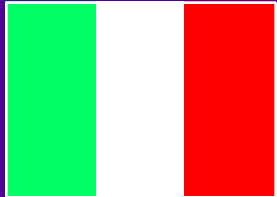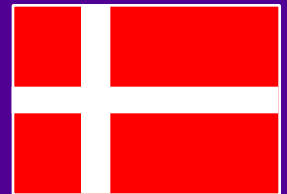
EUCLID RTP 6.1

EUropean **C**o-operation for the **L**ong term **I**n **D**efence - **EUCLID**

The GRACE Consortium

Objective:
*To accelerate the application of AI techniques
and advanced HCI and software engineering
in C³I workstations*

logica

THE
GRACE
CONSORTIUM

Size of EUCLID RTP 6.1

- 21 Mecus of which company investment 24%

- 125 man-years

- 5 years duration - to September 1998

- 7 nations, 18 companies

logica

Achieving RTP 6.1 objectives

✓ demonstrate key **AI and HCI** methods and tools applied
to C3I systems

✓ encourage **European collaboration** in C ^{3}I R&D

✓ define and implement a **workstation architecture** able to
accommodate existing and emerging methods and tools
and to forge new standards

✓ evaluate using **domain simulations** of land tactical and
naval scenarios

logica

THE
G R A C **E**
CONSORTIUM

EUCLID RTP 6.1 demonstrator

Automated Report Analysis

Wide Area Picture

Naval Decision Support, Planning and Tasking

Army Decision Support, Planning and Tasking

Human-Computer Interface Framework

CABLE
C^3I Application Building Environment
- An environment for developing multi-agent systems

logica

THE
G RAC E
CONSORTIUM
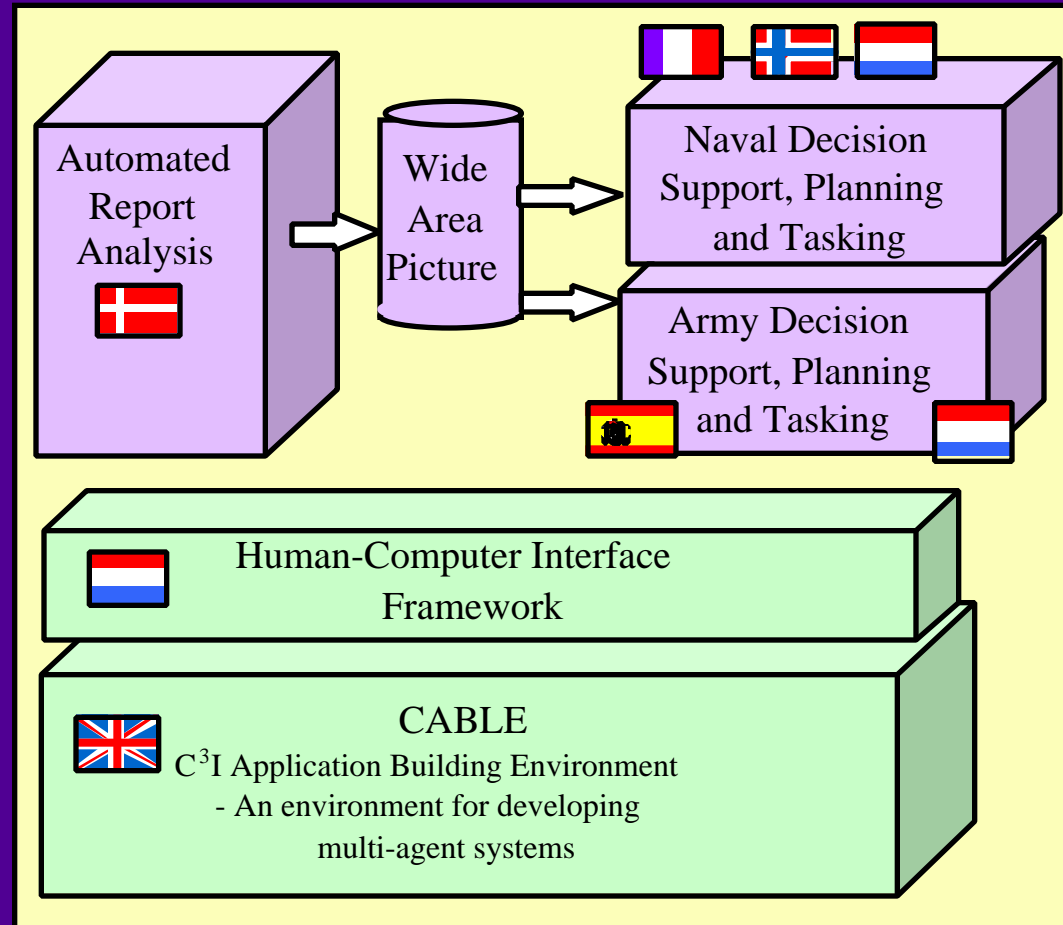
User facilities

- Uses Artificial Intelligence
- Give a military benefit
- Has a user interface
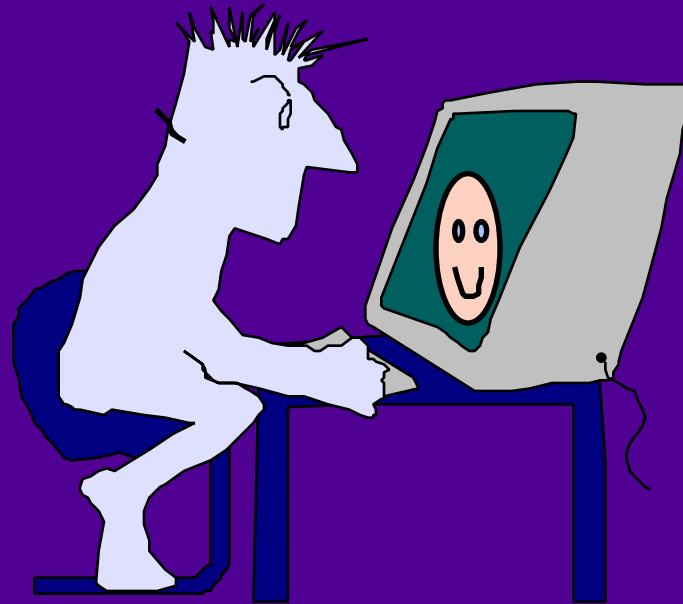
logica

Command tasks supported

- **Automated Report Analysis**
  - Message handling and report analysis
  - Wide Area Picture compilation

- **Army Decision Support, Planning and Tasking**
  - Terrain analysis
  - Course Of Action construction
  - Manoeuvre and Fire Support planning

- **Naval Decision Support, Planning and Tasking**
  - Tactical Threat evaluation
  - Anti-Surface Warfare planning
  - Engagement Coordination

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THE
G RAC E
CONSORTIUM

Multi-agent architecture

- **Intelligent agents**
    - logical next step combining OO and KBS
    - autonomous agents
    - inter-agent communication

- **Benefits of a multi-agent system**
    - cope with complexity
    - intuitive: analogy with human organisations
    - heterogeneous, plug and play, supports integration
    - transparent distribution across a network
    - flexibly partition tasks between humans and machines
    - emergent behaviour

logica

CABLE

- **CABLE**
  - C3I Application Building Environment
  - software to develop and run multi-agent applications

- **CORBA-compliant**
  - based on ORBIX
  - inter-agent communication using IDL

- **Specification, design and implementation of multi-agent systems**
  - analogy with human organisations

logica

Conclusions - EUCLID RTP 6.1

- **Multi-agent systems show great promise**

- **Artificial Intelligence can improve C^{3}I**

- **Collaborative research gives increased leverage**

- **European defence cooperation is here to stay**

logica

THE
G RAC E
CONSORTIUM

Current International Projects with DIS and HLA

- Sweden are building an RTI Lite in Java

- Danish Maritime Institute writing their own RTI
  Using it to connect multi-ship simulators

- University of Manchester is studying the use of DIS in manufacturing

- Leeds University is developing an Emergency Management
  Demonstrator using HLA

- Australia - ambitious programme to link many simulators. Formed
  own DMSO.

- See further papers in Proceedings of Society for Computer Simulation
  Genoa 24-26Oct96 and ITEC97 Lausanne April 1997

EUROPEAN SIMULATION INTEROPERABILITY WORKING GROUP

Outcome of 1st ESIWG Meeting

1. Approve Proposal to Ask DIS Steering Committee to Form Space SIG.

2. Concern Expressed over US DOD Intentions for HLA.

UK Simulation Advisory Group Concerns

◆ UKSAG is concerned at the availability and proliferation of RTIs which is in conflict with the aim of the High Level Architecture which is to achieve interoperability and code reuse

◆ UKSAG will be writing to the UK Government expressing these concerns

INTERNATIONAL SIMULATION ADVISORY GROUP

1. **UK**
2. **Germany**
3. **France**
4. **The Netherlands**
5. **Sweden**
6. **Australia**
7. Austria (?)
8. Belgium
9. China
10. Croatia

11. Czech Republic
12. Denmark
13. Finland
14. Hungary
15. Israel
16. Italy
17. Japan
18. Latvia
19. Norway
20. Poland

21. Romania
22. Russia
22. Slovenia
23. Taiwan
24. Ukraine
26. European Space Agency ESA)
26. SCS Society for Computer _Simulation International
27. EuroControl

International Simulation Advisory Group (ISAG)

ISAG CO-CHAIRMEN

★ Mick Ryan   UK SIWG

★ Francois Heran   Sogitec

★ Col Heinrich Buch   German Bundeswehr

★ Hans Jense   TNO The Netherlands

★ Peter Clark   DSTO Australia

★ Anders Mattson   FMV Sweden

The Simulation Interoperability Standards Organisation (SISO)

Executive Committee

Support Group

Conference Committee

Standards Activity Committee

International Simulation Advisory Group (ISAG)

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                    ┌──────────────┐                          ┌──────────┐
                    │  Executive   │                          │  ISAG    │
                    │  Committee   │                          └────┬─────┘
     ┌──────────┐   └──────┬───────┘                               │
     │ Support  │..........│                                  6 Committee
     │ Group    │          │                                       │
     └──────────┘          │          ┌──────────────┐    ┌────────┴─────────────────────────┐
┌──────────────┐           │          │  Standards   │    │ 25 National POCs                  │
│ Conference   ├───────────┴──────────┤  Activity    │    │  3  Org POCs (ESA, EuroControl,   │
│ Committee    │                      │  Committee   │    │                           SCS)    │
└──────────────┘                      └──────────────┘    └───────────────────────────────────┘
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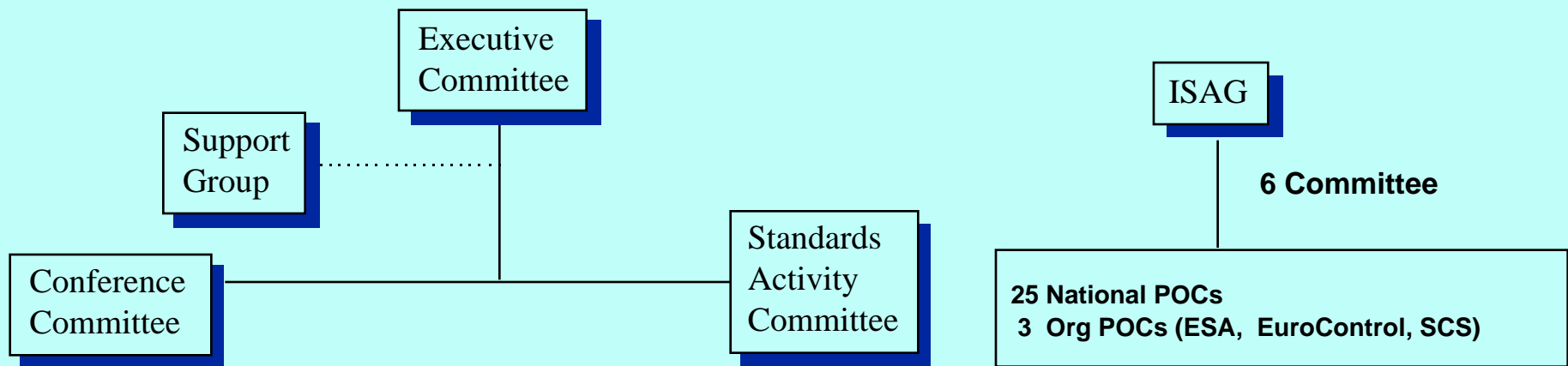
Executive Committee

Support Group

Conference Committee

Standards Activity Committee

ISAG

6 Committee

25 National POCs
3 Org POCs (ESA, EuroControl, SCS)

Defence Manufacturers Association   UK Simulation Advisory Group   Simulation Interoperability Working Group   ISAG

International Simulation Advisory Group (ISAG)

◆ **<u>International Simulation Advisory Group (ISAG) Charter</u>**

 COMMENT: Originally "European" SIWG but when Australia, Israel, Taiwan etc. wished to be associated, "International" was considered more appropriate. SISO suggested that a better title would be "International Advisory Board (IAB)" instead of "ISIWG". It is not an important point but "Board" has connotations of "Directors" and issuing orders. I believe that is not the right image. There is no question of issuing directives to anyone, certainly not the democratically elected SISO. At best we are a group of international contact points who can draw SISO's attention to common issues which may get lost in the normal debate on the Simulation Interoperability Workshop (SIW) floor. We will also have a role in co-ordinating National activities when moving IEEE standards to ISO. I have suggested retaining "Simulation" to show our areas of interest. "Modelling and Simulation Standards" is too cumbersome.

International Simulation Advisory Group (ISAG)

AIM OF THE ISAG

.The aim of the ISAG is:

"To provide a co-ordinating focus for major international interests in the work on modelling and simulation standards being carried out by the United States Simulation Interoperability Standards Organisation (SISO)."

COMMENT: "**Major**" is important as normal representation should be done through the day to day work at the SIW, Standards Committee (SC) and interim meetings. ISAG is not an organisation that intends to attract papers or lobby for routine standardisation issues. The place for that is at the SIW and the Standards Development Groups (SDGs). It should concern itself with those major issues, such as international release of the RTI, which impacts the majority of the international associates.

International Simulation Advisory Group (ISAG)

FURTHER OBJECTIVES OF THE ISAG

. In addition the ISAG have the following specific objectives:

.   **Ensure that the leadership of SISO understands the specific issues and concerns of the international community in support of SISO's goal of development of standards which can be adopted by the international community;**

.   **Ensure that SISO understands the international aspects of simulation interoperability and that members of SISO from nations other than the US understand and support SISO standards so that they can promote their adoption as national standards in their own country as well as ISO.**

COMMENT: These two objectives have been suggested by Steve Seidensticker and Bill Tucker of the SISO Transition Team. They have been charged by the SISO Transition Team to be their liaison members to help us set up ISAG. ISAG will be a separate body from SISO. However, SISO say that they will formally recognise ISAG's affiliation with SISO.

International Simulation Advisory Group (ISAG)

APPOINTMENT OF NATIONAL POINTS OF CONTACT (POCs)

Each Nation/Organisation is responsible for appointing one person as a Point of Contact by whatever means that Nation/Organisation considers is the correct mechanism. It is recommended that within his Nation/Organisation the POC has connections to at least Government, Industrial and Academic points of view.

COMMENT: It is considered inappropriate for the SISO E-mail reflector system to be used for voting to decide who represents a Nation/Organisation. The SISO E-mail reflectors are naturally dominated by the North Americans and it is inappropriate that they should determine who represents a particular Nation/Organisation. Each Nation/Organisation differs in motives and practices. Some Nation/Organisations do not yet use E-mail and would therefore be unable to exercise their vote. Since ISAG provides only advice and co-ordination, the expense and effort required to organise surrogate E-mail voting inside Nations/Organisations is not considered justified. It would also be very tempting for some of the major international commercial giants to use their large international staff vote outside of a Nation/Organisation to ensure that their local representative was appointed as the National POC. ISAG should not become involved with, or be asked to arbitrate on, who is to be the Nation/Organisation's POC.

International Simulation Advisory Group (ISAG)

APPOINTMENT OF CO-CHAIRMAN

There will be six Co-chairmen for the first year of ISAG (i.e. 22 April 1997 to 21 April 1998). They will be the six National POCs from Australia, France, Germany, Sweden, The Netherlands and the United Kingdom.

COMMENT: There will be Annexes detailing the voting and representational procedures that will be similar to thos used by SISO. Once SISO are satisfied that we are able to represent all views fairly, and are democratically elected, then they will give us formal approval.

International Simulation Advisory Group (ISAG)

MEMBERSHIP

The membership of the ISAG is open to any person or company belonging to a Nation/ Organisation who has asked to be associated with ISAG and who provides a POC.

SUBSCRIPTIONS

There will be no subscriptions for ISAG.

COMMENT: Once the ISAG starts to ask for subscriptions, particularly as their collection will be on a world-wide basis, then funding and a permanent staff will probably be unavoidable. Maybe after a few years it will be decides that ISAG needs to be placed on a more formal footing. In that case it will probably be necessary to form an international secretariat paid for from either National/Organisational or individual subscriptions.

International Simulation Advisory Group (ISAG)

COMMITTEES

Full Committee The Full Committee will consist of the POCs and will meet at least once a year at ITEC just before the ITEC International meeting. The first Full Committee meeting will be held on 21 April 1997 at 2000 hrs in Lausanne, the night before the International Meeting. It is proposed that this first meeting will be chaired by the UK POC until a Chairman of the Executive Committee can be appointed by vote as the first order of business at that meeting. The chairman of the Full Committee will also Chair the International meeting the next day.

Executive Committee The working or representation Committee will be known as the Executive Committee and will consist of the six Co-chairman who will meet at least annually at ITEC and, as required, in association with SISO activities, (e.g. the two SIWs).

International Simulation Advisory Group (ISAG)

MEETINGS

International Meetings These will be for all ISAG individual members. There will be one annual International meeting of all ISAG members at ITEC. This will be held in the main Conference Hall for one hour, (usually 9-1000 hrs), before the ITEC launch ceremony. This meeting will be used to vote for the appointment of the new Executive Committee Co-chairmen and to vote on policy or actions proposed to it by the Executive or Full Committees. POCs will be invited to give a short update on modelling and simulation activities within their Nation/Organisation during the previous year.

Full Committee Meetings These will be for only the POCs from each Nation/Organisation. Anyone can attend these meetings as a non-voting observer. These will be held at least just before the International Meeting at ITEC each year.

Executive Committee These will be for the six Co-chairmen. Set times and places of the meetings should be avoided as attendance is not funded. They will usually be held in association with SISO activities, (e.g. at the two Simulation Interoperability Workshops). A quorum of at least two Co-chairmen will be required unless the Executive Committee has voted for a single member to represent them at a particular meeting. Anyone can attend these meetings as a non-voting observer.